

W. H. H. TRACY.

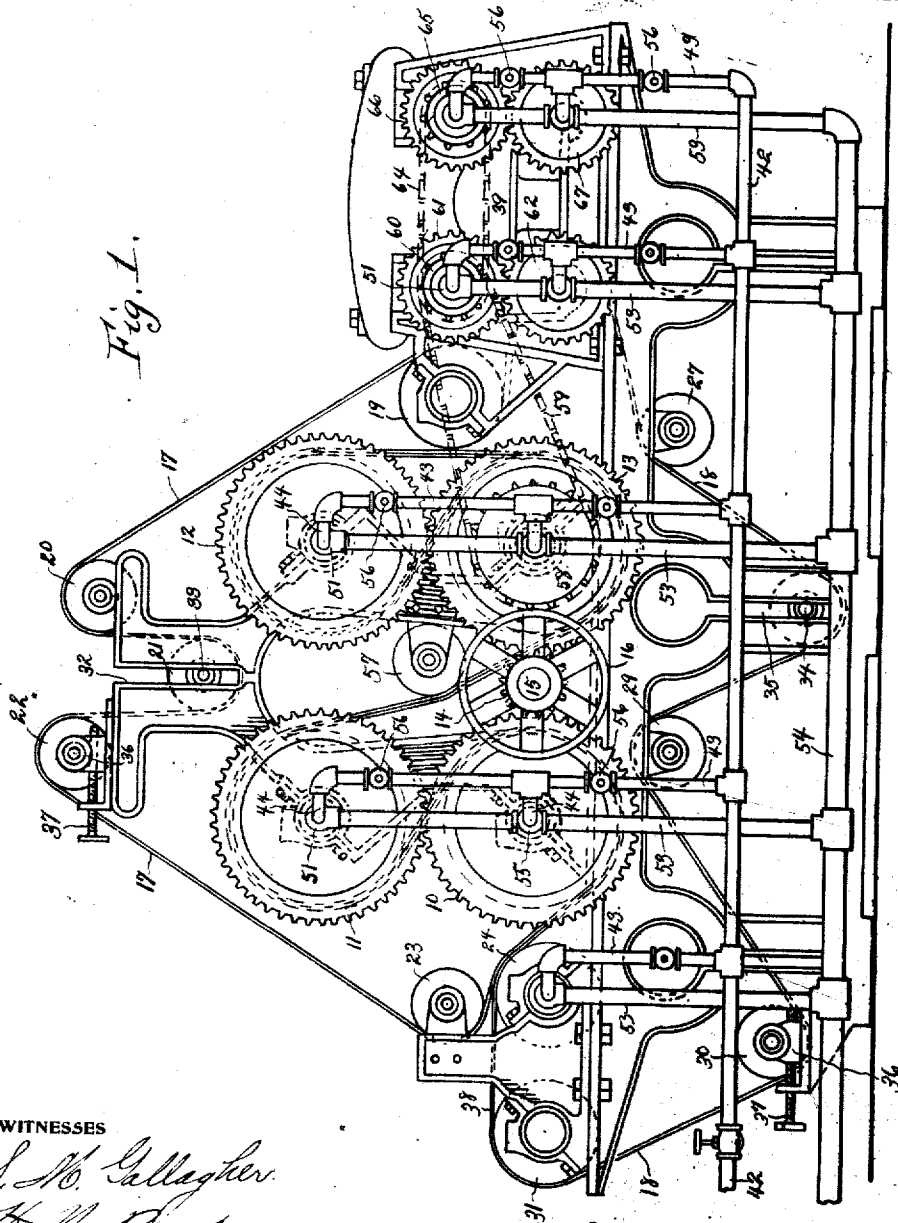
DRYING AND IRONING MACHINE.

APPLICATION FILED JUNE 16, 1909. RENEWED JUNE 28, 1911.

1,017,349.

Patented Feb. 13, 1912.

3 SHEETS-SHEET 1.



WITNESSES

S. M. Gallagher
H. V. Burton

INVENTOR

William H. H. Tracy

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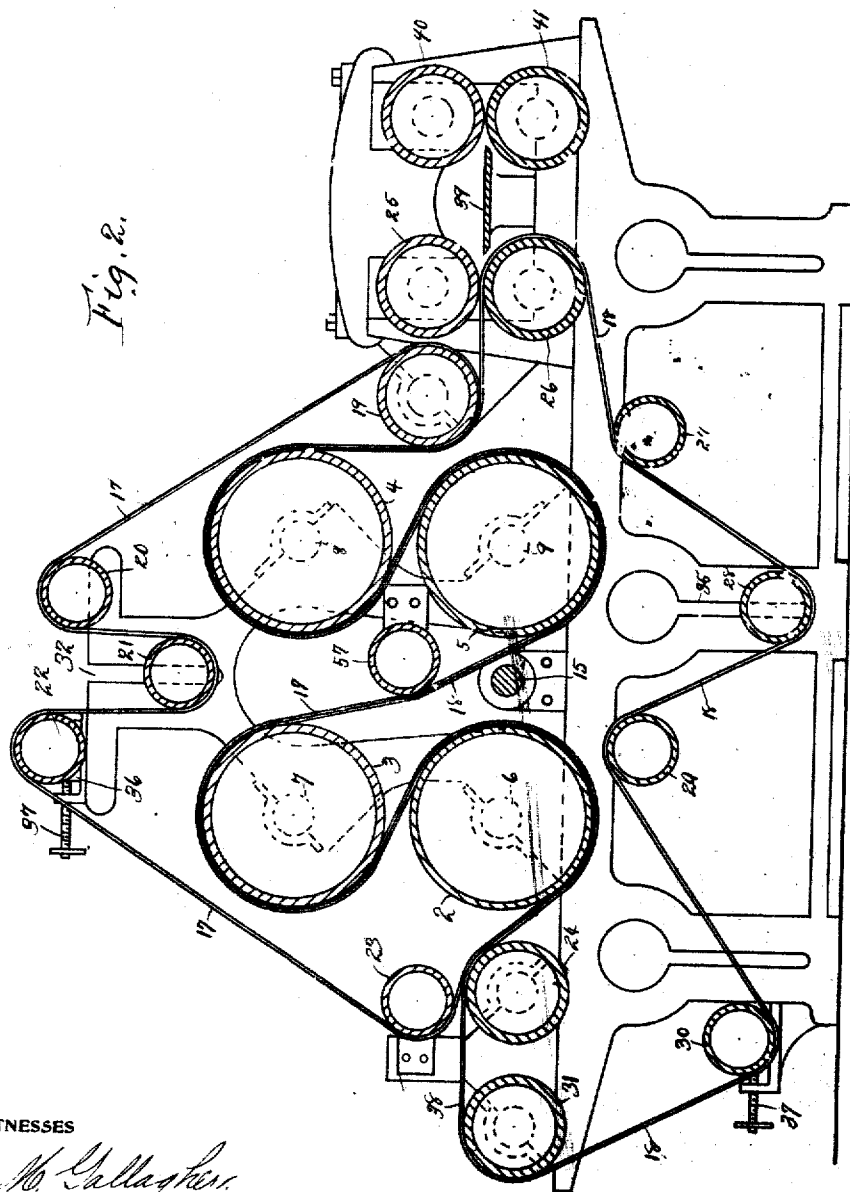
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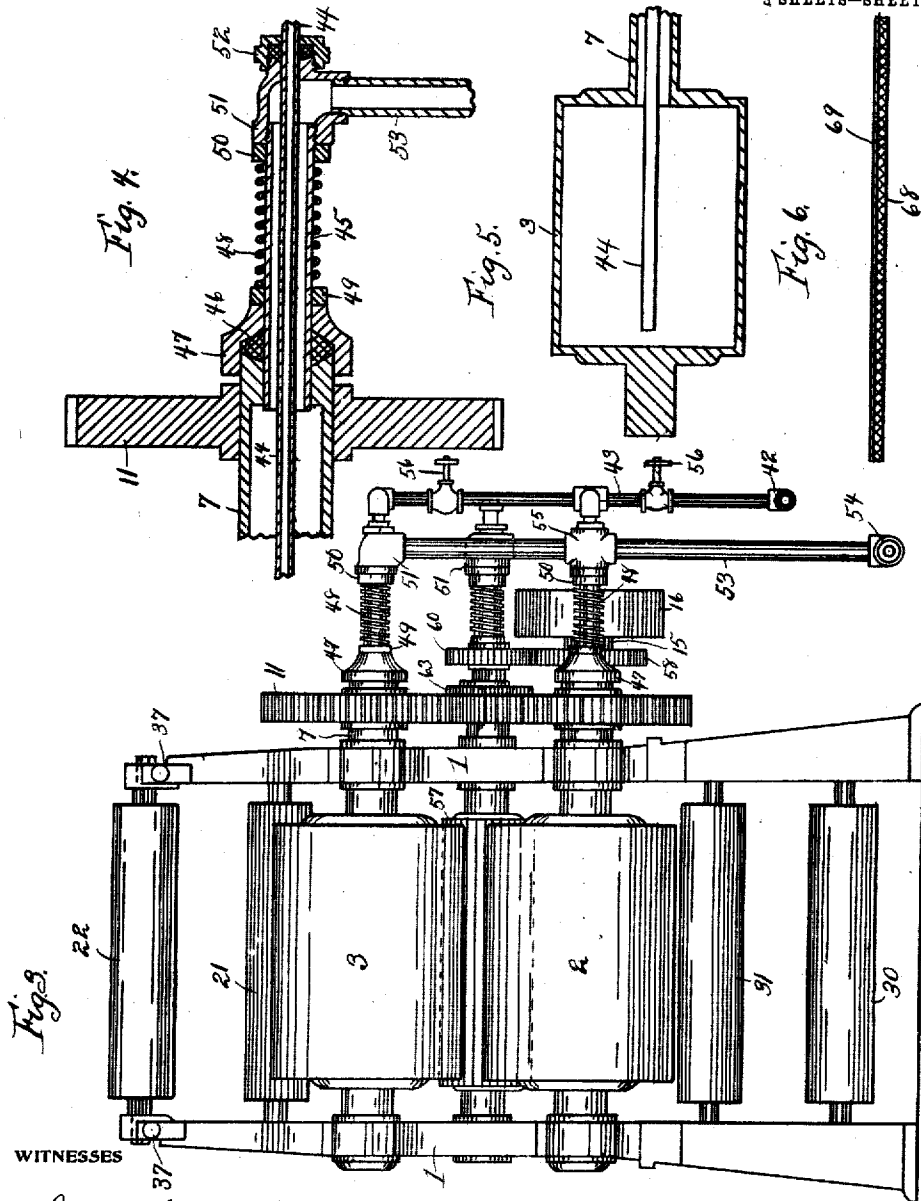
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UNITED STATES PATENT OFFICE.

WILLIAM H. H. TRACY, OF TROY, NEW YORK.

DRYING AND IRONING MACHINE.

1,017,349.

Specification of Letters Patent.

Patented Feb. 13, 1912.

Application filed June 16, 1909, Serial No. 502,433. Renewed June 28, 1911. Serial No. 635,895.

To all whom it may concern:

Be it known that I, WILLIAM H. H. TRACY, a citizen of the United States, residing at Troy, in the county of Rensselaer and State of New York, have invented a certain new and useful Improvement in Drying and Ironing Machines, of which the following is a specification.

This invention relates to a drying and ironing machine, especially designed for laundry work, and consists in the construction and arrangement of parts hereinafter more fully set forth and pointed out particularly in the claims.

The object of the invention is to provide a power machine of the character described, wherein the arrangement is such that collars and cuffs, after being washed and starched, may be quickly and perfectly dried and ironed during their passage through the machine, provision being made for greatly facilitating this work, whereby a very great number of pieces may be dried and ironed in a comparatively short space of time.

The above object is attained by the mechanism illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation of a machine embodying my invention, showing the combination of the drying and ironing mechanism. Fig. 2, is a central longitudinal section therethrough. Fig. 3, is a front end elevation. Fig. 4, is an enlarged fragmentary view in section through the hollow shaft of one of the drying rollers, the gear thereon, the live steam pipe extending through said shaft into the interior of the roller, the return pipe for the exhaust steam, and the means for making a steam tight joint between the exhaust steam pipe and the end of said shaft. Fig. 5, is a central longitudinal section through one of the large drying rollers. Fig. 6, is an enlarged transverse section through one of the belts.

Referring to the characters of reference, 1 designates the frame in which are journaled the shafts of the rollers over which pass the endless belts between the contiguous faces of which the articles to be dried and ironed are conveyed through the machine. The main drying rollers comprise the rollers 2, 3, 4 and 5 mounted upon their respective shafts 6, 7, 8 and 9. Said rollers are in the form of hollow cylinders and are connected together and driven in pairs

by the meshing gear wheels 10, 11, 12 and 13 mounted on the shafts respectively of said rollers. Motion is transmitted to said gear wheels through the medium of a pinion 14 (see Fig. 1) mounted on a shaft 15 journaled in the frame and carrying the driving pulley 16 on the outer end thereof adapted to receive a belt through the medium of which motion may be transmitted to said pulley from any suitable source of power. By a rotation of the shaft 15 the rollers 2, 3, 4 and 5 will be driven in unison, and at the same rate of speed through the medium of the meshing gears upon the shafts thereof. A traveling conveyor is adapted to pass around said rollers, comprising an upper endless belt 17 and a lower endless belt 18. Said belts travel together in close contiguity while passing over the main rollers, but at the idle roller 19 in the rear of the main rollers, said belts are separated, the upper belt passing around said roller and upwardly over the idle roller 20, the vertically movable roller 21 and the adjustable idle roller 22, and thence downwardly around the idle roller 23, where it again joins the lower belt in passing over the second of the feed rollers 24 from which point said belts travel together onto the first roller 2 of the main rollers. The lower belt 18 after passing under the idle roller 19 continues horizontally between the discharge rollers 25 and 26 around the latter of which it passes and returns to the forward end of the machine over the idle roller 27, the vertically movable roller 28, the idle roller 29, and the adjustable idle roller 30. From the roller 30 the lower belt passes upwardly around the first of the feed rollers 31 and thence horizontally over the second feed roller 24 where it joins the upper belt from which point said belts move through the machine together. It will be noted that the vertically movable roller 21 around which the upper belt passes is interposed between the idle rollers 20 and 22 below the plane thereof so that the belt extends downwardly from said rollers and around the roller 21. In the opposite sides of the frame are formed vertical slots 32 in which the ends of the shaft 33 of the roller 21 lie. By this arrangement the roller 21 becomes suspended by the belt 17, said roller being of such weight as to maintain the desired tension upon said belt. In like manner the lower belt 18 is kept taut by

the vertically movable roller 28 which is suspended by said belt between the rollers 27 and 29, the shaft 34 of the roller 28 being guided in the vertical slots 35 in the sides of the frame.

The shafts of the rollers 22 and 30 are mounted in adjustable bearing blocks 36 at the opposite ends thereof adapted to be moved by the adjusting screws 37, whereby the opposite ends of said rollers may be shifted as required to cause the belts passing thereover to run truly.

The articles to be dried, comprising collars, and cuffs are placed upon the straight portion 38 of the lower belt which extends between the rollers 24 and 31, and serves as a table. When placed upon said table or straight portion of said belt, said articles, by the travel of the belt are carried between the meeting faces of the lower and upper belts as said belts come together in passing over the roller 24, whereby said articles are retained in place between said belts and are carried around the main rollers by the travel of said belts being liberated finally after passing under the idle roller 19, at which point the upper belt leaves the lower belt by passing around said roller, while the lower belt continues around the roller 26. By this arrangement the articles which are left upon the lower belt are caused to pass between the rollers 25 and 26 and are discharged onto the table 39 over which they travel to the ironing rollers 40 and 41 between which said articles pass and from which they are discharged into any suitable receptacle.

In order that the rollers over which the conveyer belts travel shall be sufficiently heated to evaporate the moisture from the articles between said belts, it is preferred to admit live steam to the interior of said rollers through the main supply pipe 42 which is connected with any suitable source of steam supply and from which extend the vertical pipes 43. Extending horizontally from the vertical pipes are the branch pipes 44 which lead into the interior of said rollers, as clearly shown in Fig. 5. To allow for the escape of the exhaust steam from the rollers, a relatively large pipe 45 communicates with the interior of each of said rollers through the hollow journal thereof, as clearly shown in Fig. 4, said pipe lying loosely within said journal and being embraced by a ring of packing 46, which is confined between the end of the journal and an embracing collar 47 which serves as a gland. The collar 47 is held forcibly against the packing 46 to make a tight joint by means of a strong spring 48 which at one end bears against a washer 49 lying against said collar, and at the other end against a washer 50 lying against the hub of the elbow 51 on the outer end of the

pipe 45. By this arrangement, the journal of the roller is permitted to revolve, and at the same time a steam tight joint is maintained between the end of said journal and the pipe 45. The branch pipe 44 passes centrally through the pipe 45 and enters the elbow 51 through a stuffing box 52. Communicating with the elbow 51 is a vertical exhaust pipe 53 which at its lower end connects with the main exhaust pipe 54. It will be noted that the vertical steam pipes and the vertical exhaust pipes each connect with two of the steam heated rollers, excepting the two pipes at the extreme front of the machine, and that the exhaust pipes which lead from the lower rollers of each pair, are provided with a T-coupling 55 instead of the elbow 51 which is employed at the upper roller. To enable the temperature of the steam heated rollers to be regulated, the vertical steam supply pipes are provided with suitable valves 56.

For the purpose of maintaining the requisite pressure upon the conveyer belts during their travel between the rollers 3 and 5 to prevent a possible shifting of the articles between said belts, an idle roller 57 is employed which bears against said belts with sufficient force to hold them firmly together upon the articles between their contiguous faces.

To impart movement to the rollers 25 and 26, a sprocket wheel 58 is mounted upon the shaft of the roller 5 from which leads a sprocket chain 59 that passes over a sprocket wheel 60 upon the shaft of the roller 25. Also mounted on the shaft of said roller is a gear wheel 61 which meshes with a like gear 62 on the shaft of the roller 26, whereby the rollers 25 and 26 are caused to revolve in unison at the same rate of speed. On the shaft of the roller 25 is a second sprocket wheel 63 which is connected by a chain 64 with a sprocket wheel 65 on the shaft of the roller 40. Also mounted on the shaft of the roller 40 is a gear wheel 66 which meshes with a like gear wheel 67 on the shaft of the roller 41, whereby the rollers 40 and 41 are driven in unison from the shaft of the roller 25.

In addition to heating the main rollers, steam is also applied to and exhausted from the second of the feed rollers 24 over which the conveyer belts first pass, and also to and from the discharge and ironing rollers at the rear of the machine. By controlling the flow of steam to said rollers through the medium of the valves 56 in the steam supply pipes, the temperature of said rollers may be regulated so that the desired degree of heat may be maintained in any of the rollers in the machine at all times. Instead of heating the rollers by steam, they may be heated by gas, electricity, or in any other suitable manner.

It will now be understood that in the operation of this machine, the articles to be dried are carried over the heated rollers between the conveyer belts, whereby the moisture contained in said articles is evaporated by the high temperature of the rollers over which the conveyer belts pass, so that when said articles reach the rear of the machine, they are in proper condition to be ironed, and after passing between the ironing rollers said articles are finally discharged therefrom in a finished state. The length of time required in the passage of the articles through the machine is determined by the degree of moisture which they contain when presented thereto. In all cases the speed of the machine is so regulated that the time consumed in the passage of the articles therethrough will be sufficient to properly dry the articles before they are presented to the ironing rollers. It will be understood that by maintaining the rollers at a high temperature, the machine may be run at a comparatively high speed, thereby enabling the articles which are carried through the machine between the conveyer belts to be dried in a very short time.

The conveyer belts, as will be seen on referring to Fig. 6, are formed, preferably, of a body portion of felt 68 and a covering or facing of linen or cotton 69. The facing of linen or cotton prevents the lint or fuzz sticking to the collars and cuffs as they pass through the machine, but in no wise retards or interferes with the absorption of the moisture. Another and important feature of the cotton or linen covering is that the articles being conveyed by the belts do not

stick to the belts which would otherwise cause said articles to follow one or the other of said belts when the latter are separated and thus prevent the proper delivery to the ironing rollers.

Having thus fully set forth my invention, what I claim as new and desire to secure by Letters Patent, is:--

1. In a machine for the purpose set forth, a plurality of rollers, two conveyer belts adapted to pass over said rollers, said belts traveling together over some of the rollers, and singly over others, said belts being separated at the rear of the machine and thence returned to the forward end thereof, means for heating the rollers over which said belts pass when traveling together, ironing rollers in the rear of the point where said belts separate, and means for driving the heating rollers and ironing rollers in unison.

2. In a machine for the purpose set forth, a plurality of heated rollers, conveyer belts adapted to move together over said rollers during a portion of their travel and to confine collars and cuffs between the meeting faces thereof, said belts consisting of a body portion of felt and a facing of linen or cotton, the facings of said belts lying contiguous when said belts are passing together over said rollers.

In testimony whereof, I have hereunto affixed my signature in the presence of two subscribing witnesses.

WILLIAM H. H. TRACY.

Witnesses:

EDW. W. ANSTICE,
S. M. GALLAGHER.